



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,437	05/16/2000	MANABU OUMI	S004-3848	5091

7590 02/09/2004

BRUCE L ADAMS
ADAMS & WILKS
50 BROADWAY
31ST FLOOR
NEW YORK, NY 10004

EXAMINER

LE, KIMLIEN T

ART UNIT	PAPER NUMBER
----------	--------------

2653

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,437

Applicant(s)

OUMI ET AL.

Examiner

Kimlien T Le

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/5/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 19, 20 and 32-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 19, 20 and 32-40 is/are rejected.
- 7) ☒ Claim(s) 41-44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on November 5, 2003 have been fully considered but they are not deemed to be persuasive.

Applicant asserts on page 10:

"As demonstrated hereinafter, applicants respectfully submit that neither of independent claims 1 and 19 is rendered obvious by the prior art of record because the secondary reference to Tanaka does not suggest modifying the probe of Schaenzer to form a microscopic aperture protruding from the bottom surface of a slider as recited by each of independent claims 1 and 19."

The Examiner maintains that Tanaka suggests modifying the probe of Schaenzer to form a microscopic aperture protruding from the bottom surface of a slider, since they are art recognized equivalents for near-field recording with the advantage that the system of Tanaka does not require the lens.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 19-20 and 32-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaenzer et al(U.S. Patent 5,831,797) in view of Tanaka(U.S. Patent 5,808,973),

Art Unit: 2653

Regarding claim 1, Schaenzer et al shows a near-field optical head, comprising: a slider (20) supported by a suspension arm (22) providing a load weight and obtaining a floating force due to a relative motion of the slider with respect to a recording medium (12) so that a gap is produced between a bottom surface of the slider and a surface of the recording medium due to a balance between the load weight and the floating force (Fig. 1). Schaenzer et al does not show a probe comprising a microscopic aperture formed in the bottom surface of the slider for producing a near-field light or converting a near-field light produced on a surface of the recording medium into a propagation light without a lens being disposed proximate the microscopic aperture for producing or converting the near-field light. However, Tanaka teaches a probe (34) without a lens comprising a microscopic aperture (33) (column 6, lines 7-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide Schaenzer et al with the probe as taught by Tanaka in lieu of the lens structure shown by Schaenzer et al. The rationale is as follows: one of ordinary skill in the art at the time of the invention would have been motivated to provide Schaenzer et al with the probe as taught by Tanaka, in lieu of the lens structure shown by Schaenzer et al, since they are art recognized equivalents for near-field recording with the advantage that the system of Tanaka does not require the lens.

Regarding claim 19, Schaenzer et al further shows a near-field optical head, comprising: a support member (26) mounted to undergo relative movement with respect to a sample (Fig. 1).

Regarding claim 20, Schaenzer et al shows the head according to claim 19, wherein the support member comprises a slider (20) supported by a suspension arm (24) for providing a load weight and producing a floating force in response to relative motion thereof with respect to the

Art Unit: 2653

sample (12) so that a gap is formed between the probe and the sample due to a balance between the load weight and the floating force (Fig. 1).

Regarding claim 32, Tanaka shows the probe having a tapered projection (34) mounted to the support member and having a sharpened tip (33) protruding from the bottom surface of the support member (Fig. 2).

Regarding claim 33, Tanaka shows the probe that comprises a through-hole (33) formed in the slider and terminating in the microscopic aperture (Fig. 2).

Regarding claim 34, Tanaka shows the probe comprising a light shielding layer (32) covering the through-hole except for the microscopic aperture (Fig. 2).

Regarding claim 35, Tanaka shows the probe that comprises a light source disposed on a top surface of the slider above the through-hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture (Fig. 2).

Regarding claim 36, Tanaka shows a probe that comprises a through-hole (33) formed in the slider and terminating in the microscopic aperture; a light shielding layer (32) covering the through-hole except for the microscopic aperture; and a light source (36) mounted on a top surface of the slider above the through hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture (Fig. 2).

Regarding claim 37, Tanaka shows the probe comprises a through-hole (33) formed in the support member and terminating in the microscopic aperture (Fig. 2).

Regarding claim 38, Tanaka shows the probe that comprises a light shielding layer (32) covering the through-hole except for the microscopic aperture (Fig. 2).

Regarding claim 39, Tanaka shows the probe that comprises a light source (36) disposed on a top surface of the support member above the through hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture (Fig. 2).

Regarding claim 40, Tanaka shows the probe that comprises a through-hole (33) formed in the support member and terminating in the microscopic aperture; a light shielding layer (32) covering the through-hole except for the microscopic aperture; and a light source (36) disposed on a top surface of the support member above the through hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture (Fig. 2).

Allowable Subject Matter

3. Claims 41-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is an examiner's statement of reasons for allowance:

In claim 41, the limitation of a near-field optical head comprising a through-hole formed in a reduced thickness portion of the slider and terminating in the microscopic aperture; and a light source mounted on a top surface of the reduced thickness portion of the slider above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture, taken in conjunction with the limitations of claim 1, is not anticipated by, nor made obvious, over the prior art of record.

In claim 43, the limitation of a near-field optical head comprising a through-hole formed in a reduced thickness portion of the slider and terminating in the microscopic aperture; and a

Art Unit: 2653

light source mounted on a top surface of the reduced thickness portion of the slider above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture, taken in conjunction with the limitations of claim 19, is not anticipated by, nor made obvious, over the prior art of record.

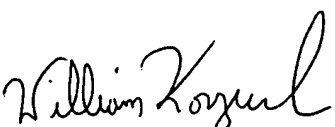
Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimlien T Le whose telephone number is 703 305 3498. The examiner can normally be reached on M-F 8a.m-5p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703 305 6137. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9314 for regular communications and 703 872 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 3900.

Kimlien Le
February 5, 2004


WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600